UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,021	07/13/2000	G. Michael Phillips	35512-00033	3965

7590   11/16/2004

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EXAMINER
SUBRAMANIAN, NARAYANSWAMY

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/615,021	PHILLIPS ET AL.
Office Action Summary	Examiner	Art Unit
	Narayanswamy Subramanian	3624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10 August 2004</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-27,37 and 39* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-27,37 and 39* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This is in response to communication dated August 10, 2004. Amendments to claims 1,

37 and 39 have been entered. Rejection of claims 1-27 under 35 USC § 101 in the last office

action are withdrawn in view of the amendments. Claims 1-27, 37 and 39 are pending in this

application and have been examined. The objections, rejections and response to arguments are

stated below.

Specification

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and
> process of making and using it, in such full, clear, concise, and exact terms as to enable any
> person skilled in the art to which it pertains, or with which it is most nearly connected, to make
> and use the same and shall set forth the best mode contemplated by the inventor of carrying out
> his invention.

3.   The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to

support the subject matter set forth in the claims. The specification, as originally filed does not

provide support for the invention as now claimed.

The test to be applied under the written description portion of 35 U.S.C. § 112, first

paragraph, is whether the disclosure of the application as originally filed reasonably conveys to

the artisan that the inventor had possession at that time of later claimed subject matter. Vas-Cat,

Inc. v. Mahurkar, 935 F. 2d 1555, 1565, 19 USPQ2d 111, 1118 (Fed. Cir. 1991), reh'rg denied

(Fed. Cir. July 8, 1991) and reh'rg, en banc, denied (Fed. Cir. July 29, 1991).

Independent claims 1, 37 and 39 include the limitation "wherein the value fluctuates

without further investment by the owner". Claims 2-27 include these limitations by way of

dependency on the independent claim 1. However, the specification does not provide an enabling

disclosure to support the claimed limitation of "wherein the value fluctuates without further

investment by the owner".

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:
        The specification shall contain a written description of the invention, and of the manner and
        process of making and using it, in such full, clear, concise, and exact terms as to enable any
        person skilled in the art to which it pertains, or with which it is most nearly connected, to make
        and use the same and shall set forth the best mode contemplated by the inventor of carrying out
        his invention.

5.   Claims 1-27, 37 and 39 are rejected under 35 U.S.C. 112, first paragraph, as containing

subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. In particular, claims 48-68 are rejected under 35 U.S.C.

§ 112, first paragraph, for the reasons set forth in the objection to the specification.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1, 2, 6, 7, 14, 37 and 39 are rejected under 35 U.S.C. 102(b) as being fully

anticipated by Lambert (US 3,270,310)

        With reference to Claims 1, 2, 6, 7, 14, 37 and 39, Lambert teaches a method, an

apparatus and a computer-readable medium respectively, for evaluating an asset, said method

comprising: using at least one computer to: (a) process historical data for value of an asset and

historical data values for plural exogenous variables to obtain a formula for calculating a

measure of a tendency of the value of the asset to change as a result of changes in the data values

for the exogenous variables, wherein said formula is a function of the exogenous variables; (b)

input projected data values for the exogenous variables; and (c) estimate a measure of the

tendency of the value of the asset to change based on a change in at least one of the exogenous

variables using the formula obtained in step (a) and the projected data values input in step (b),

wherein the asset can be purchased by an owner, and wherein the value, whose tendency to

change is estimated in step (c), fluctuates without further investment by the owner (See Lambert

Column 1 line 9 – Column 2 line 9 and claim 1). A computer-readable medium is inherent in the

computer of Lambert and the stock prices are interpreted to include market price of the asset.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

9.   Claims 3-5, 12-13 and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lambert (US 3,270,310) in view of Bekaert et al (US Patent 6125355).

With reference to Claims 3-5, Lambert teaches a method of claim 1 as discussed above.

Lambert fails to teach the steps wherein said asset comprises a portfolio of shares of

stock in plural different corporations, an index or a mutual fund.

Bekaert teaches the steps wherein the asset comprises a mutual fund. (See Bekaert

Column 3 lines 43-46) Mutual funds are interpreted to include a portfolio of shares and also an

index, as in the case of an index fund.

Both Lambert and Bekaert are concerned with predicting the future price of an asset like

common stock. It would have been obvious to one with ordinary skill in the art at the time of

invention to include the disclosures of Bekaert to the teaching of Lambert. The combination of

the disclosures taken as a whole suggests that it would help the user to predict the future price of

other assets also.

With reference to Claim 12, Bekaert teaches a method of claim 7 wherein said price

formula describes a logarithm of the value of said asset as a function of logarithms of said

exogenous variables. (See Bekaert Column 11 lines 3-6)

With reference to Claim 13, Bekaert teaches a method of claim 1 wherein step (b)

comprises obtaining current values for said exogenous variables and allowing a user to alter

plural of said current values to produce a "what if" scenario, and wherein data values for said

"what if" scenario are used as said projected data values for the exogenous variables. (See

Bekaert Column 4 lines 45-50)

With reference to Claim 21, Bekaert teaches a method of claim 1 further comprising the

steps of repeating steps (a) through (c) for plural different assets and selecting a subset of said

plural assets based on measure estimated in step (c). (See Bekaert Column 4 lines 17-23)

Determination of one or more optimal portfolios is interpreted to include the step of selecting a

subset and steps of repeating (a) through (c) for plural different assets are inherent in the method

of Bekaert.

10.   Claims 8, 9, 15-18, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lambert (US 3,270,310) in view of Makridakis (Reference V).

With reference to Claims 8, 9 and 23-26, Lambert teaches a method of claims 1 and 7 as

discussed above.

Lambert fails to teach the steps wherein said price formula is obtained by performing a

non-linear regression or neural network processing.

Makridakis teaches the step of using non-linear regression or neural network processing

for estimating a formula. (See Makridakis pages 433-439). The examples used by Makridakis are

to illustrate the principles of the multivariate technique that is discussed and hence the

applications of those principles are not limited to those examples per se.

Both Lambert and Makridakis are concerned with using multivariate analysis for

predicting the value of a dependent variable. It would have been obvious to one with ordinary

skill in the art at the time of invention to include the disclosures of Makridakis to the teaching of

Lambert. The combination of the disclosures taken as a whole suggests that it would help the

user to predict the future price of common stock using a multivariate analysis that is appropriate

for the situation.

With reference to Claims 15 and 16, Makridakis teaches the step wherein said tendency

of the value of the asset to change based on the change in said at least one of the exogenous

variables is a measure of elasticity or sensitivity of the value of the asset to said at least one of

the exogenous variables (See Makridakis pages 211-227, 241-260 and 433-439). Regression

coefficients of a log-transformed function represent elasticity measures. It would have been

obvious to one with ordinary skill in the art at the time of the current invention to combine the

disclosures of Makridakis to the teaching of Lambert. The combination of the disclosures taken

as a whole suggests that users would have benefited from the further insights that these statistics

provide about the estimated model. The combination also suggests the neural networks would

help the user save time, money and make the estimating process more accurate and efficient.

With reference to Claims 17 and 18, Makridakis teaches the step of determining the

reliability of the estimated model and the step of performing Student's t-test. (See Makridakis

pages 211-227) It would have been obvious to one with ordinary skill in the art at the time of the

current invention to combine the disclosures of Makridakis to the teaching of Lambert. The

combination of the disclosures taken as a whole suggests that users would have benefited from

getting a measure of reliability of the estimated model and allowed them to choose alternative

models that provide better reliability.

With reference to Claim 22, Makridakis teaches the step of determining the reliability of

the estimated models (See Makridakis pages 211-227 and 241-260) One of the purposes in

estimating reliability is to use the models that are reliable in making selections. Hence selecting a

subset of assets based on the reliability of the models is a teaching inherent in the disclosure of

Makridakis. It would have been obvious to one with ordinary skill in the art at the time of the

current invention to combine the disclosures of Makridakis to the teaching of Lambert. The

combination of the disclosures taken as a whole suggests that users would have benefited from

getting a measure of reliability of the estimated model and allowed them to choose alternative

subsets of assets that have greater reliability.

11.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (US

3,270,310) in view of Rebane (US Patent 6,405,179 B1)

With reference to Claim 10, Lambert teaches a method of claim 7 as discussed above.

Lambert fails to explicitly teach the step wherein said formula is in a format of a truncated Taylor series expansion.

Rebane teaches the step of using a truncated Taylor series expansion to estimate a formula (See Rebane Column 7 lines 28-30) Truncation helps in reducing the number of terms to be estimated and there are benefits in the form of cost and timesavings.

It would have been obvious to one with ordinary skill in the art at the time of the current invention to combine the step of using a truncated Taylor series expansion to estimate the formula to the invention of Lambert. The combination of the disclosures taken as a whole suggests that users would have benefited from the cost and time savings as a result of the truncation.

12.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (US 3,270,310) in view of Rebane (US Patent 6,405,179 B1) and further in view of Garg et al (US Patent 6,144,945)

With reference to Claim 11, Lambert and Rebane combined teach a method of claim 10 as discussed above.

Lambert and Rebane combined fail to explicitly teach the step wherein said formula is in a format of a truncated Maclaurin series expansion.

Garg teaches the step of using a truncated Maclaurin series expansion to estimate a formula (See Garg Column 11 line 14 – Column 12 line 6) Truncation helps in reducing the number of terms to be estimated and there are benefits in the form of cost and timesavings.

It would have been obvious to one with ordinary skill in the art at the time of the current invention to combine the step of using a truncated Maclaurin series expansion to estimate the formula to the invention of Lambert. The combination of the disclosures taken as a whole suggests that users would have benefited from the cost and time savings as a result of the truncation.

13.   Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (US 3,270,310) in view of Goertzel et al (US Patent 6,532,449 B1)

With reference to Claim 27, Lambert teaches a method of claim 1 as discussed above.

Lambert fails to explicitly teach the step of using a genetic algorithm to obtain a formula.

Goertzel teaches the step of using a genetic algorithm to obtain a formula. (See Goertzel Column 1 lines 51-62, Column 3 lines 12-24, Column 5 line 66 – Column 6 line 27) A genetic algorithm is useful in predicting a future value or direction of a numerical time series using a non-numerical time series.

It would have been obvious to one with ordinary skill in the art at the time of the current invention to combine the disclosures of Goertzel to the invention of Lambert. The combination of the disclosures taken as a whole suggests that users would have benefited from predicting a future value or direction of a numerical time series such as asset pricing using a non-numerical time series.

14.   Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (US 3,270,310) in view of Ray et al (US Patent 6,018,722)

With reference to Claims 19 and 20, Lambert teaches a method of claim 1 as discussed above.

Lambert fails to explicitly teach the steps of initiating at least one of a purchase of said

asset and a sale of said asset, and initiating at least one of a purchase of another asset and a sale

of said other asset based on the estimate made in step (c).

Ray et al teaches the steps of initiating a purchase or sale of any security based on the

recommendation of an expert system. (See Ray claims 1, 5 and 7).

It would have been obvious to one with ordinary skill in the art at the time of the current

invention to combine the steps taught by Ray to the invention of Lambert. The combination of

the disclosures taken as a whole suggests that users would have benefited from a timely follow

up on the recommendation based on the estimate made in step (c). Timely follow up would also

make the process more efficient.

Response to Arguments

15.   Applicant's arguments with respect to claims 1-27, 37 and 39 have been considered but

are moot in view of the new ground(s) of rejection.

Conclusion

16.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
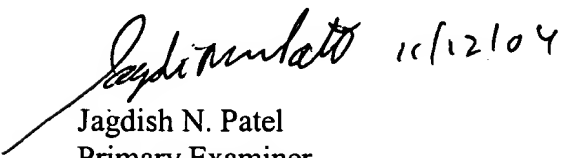
A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Narayanswamy Subramanian whose telephone number is (703) 305-4878. The examiner can normally be reached Monday-Thursday from 8:30 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached at (703) 308-1065. The fax number for Formal or Official faxes and Draft or Informal faxes to the Patent Office is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1113.

N. Subramanian
November 7, 2004

Jagdish N. Patel
Primary Examiner